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glyphs and cornice. In the Ionic order we found a part of a fluted semi-column, an architrave and cornices of two types, with dentils (*Fig. 2*), and without them. Two anthemia of marble (*Fig. 3*) and several of terracotta were discovered, besides Roman lamps, weights, a discus, and some corroded coins.

#### IV. THE STAGE-BUILDING OF THE THEATRE OF ERETRIA.

In dealing with masonry at Eretria there are peculiar difficulties in the way. Little is known about its monuments and style of art, and, being difficult of access it has seldom been visited by archæologists. On account of its out-of-the-way position, rules of construction which have been established as archæological landmarks at Athens and elsewhere, fail utterly when applied here. Certain forms of masonry, for example, seem to have obtained at Eretria long after they had died out in many other places. Not only the same kind of stone, but even blocks cut to the same size, appear in buildings of different epochs. At the same time when clamps and other usual criteria of age are found in those parts only which on their face bear the stamp of a later age, one is entirely thrown back upon the position of the walls to solve their purpose and place in point of date.

The *cavea* of the theatre faces the south, and the stage-buildings stand east and west, deviating only six degrees from that line, the west end being six degrees north of west, and the east end the same number of degrees south of east. The situation of the theatre to the southwest of the acropolis, on a spot where no benefit could be derived from a slope to support the rising tiers of seats, is likely to be connected with the fact that there was a sanctuary of Dionysos in the neighborhood. The solid foundations in the vicinity, mentioned above, may prove to be those of a temple of the wine-god. If in choosing the sites for their theatres the ancients had an eye to the beauty of scenery, it may be noticed that sitting in the theatre you are facing the Euripos, while beyond are the hills of Attika and Boiotia with Parnes and Helikon in the distance. The original surface of the ground appears to have been almost level, rising a little toward the northwest and falling into a slight depression toward the southeast.

From the sectional plan (PL. XI) giving the elevation of the different parts, we see how the two front walls II and ΘΘHH have their foundations a little under the level of the orchestra, while the bases and the two remoter walls BB and AA lie fully three metres higher. In explain-

ing the walls I shall follow the historical development as being at the same time the true order and in this case the simplest.

Turning to the PLAN, it appears at a glance that there exists a close resemblance in plan between the two parts of the stage-building divided by the great central passage  $\Omega\Omega$ . This vaulted passage, the bottom of which is on a level with the orchestra, lies under the floor-surface of the stage-building. Over the vault and within the south wall we have a chamber (III) 6.33 m. by 3.90 m. This is flanked on either side by chambers (II and IV) of the same size, and those again by long and narrow chambers (I and V) extending five metres and a half beyond the others toward the front. The outline (AAΓΔBBEZ) is a long and narrow building with wings projecting forward. The foundation of this building consists of coarse poros blocks averaging 1.30 m. in length, 0.68 m. in width and 0.46 m. in height. The blocks are laid lengthwise except in the south wall of chambers I and II. At this point, the ground being lower, the foundation consists of two courses, and, to obtain greater solidity, the blocks in one lie crosswise and are moreover supported by buttresses where the partition-walls meet the south wall. As the ground gradually rises toward the west, the foundations go deeper. The stones are well cut and fitted, though no great pains were taken to form an even surface in foundations intended to be hidden underground. The break in the middle of the walls is of a later date, when the vaulted passage was constructed. There are openings ( $\gamma\gamma$ ) into the flank chambers on each side. Here the foundation is interrupted for a distance of 1.30 m. The ends of the adjoining blocks are cut down as if to receive a sill. At the corner beyond the door, and also between the door and the north wall of the three chambers, are signs of piers and antæ,  $\delta\delta\delta\delta$ . Where the wall BB ends in the chambers on the flanks, the terminal blocks are placed at right angles. In line with these in the north wall of the same chambers, corresponding blocks  $\epsilon\epsilon\epsilon\epsilon$  are similarly placed. These blocks may have been parts of cross-walls in these positions.

On the greater part of these foundations there remains a course of fine polygonal masonry 0.48 m. wide. The jointings are good and the work is done with a great deal of care. Wherever it is still standing it is 0.50 m. high. The material is a white, hard limestone. If there were faults in the stones or pieces roughly broken off, the edges were made regular and other stones fitted in. The polygonal wall indicated in black is still standing on all the partition walls, on

the north wall, at the southwest corner, and there are traces of it on the south and east walls. The restored portions of it are indicated in a lighter shade, with single-hatched lines. No trace appears on the foundations of the projecting chambers. No doubt it stood here also, but was removed during the reconstruction.

I have mentioned the doors into the flank chambers. There are also entrances into the three middle chambers from the front. The entrance to chamber III is in the middle of the wall, while in II and IV it is thrown to one side. The side openings are 3.33 m. and 3.38 m. wide. The middle opening is somewhat less, but here the stones have now fallen forward: we may be justified in assuming the same width for this also. On both sides of the openings lie quadrangular blocks of bluish marble. On the outer side of the side doors these blocks are 0.41 m. long and 0.20 m. high. The adjacent blocks of the wall are cut in such a way as partly to overlap the marble blocks and hold them firm. On these blocks stood the *παραστάδες* or door-jambs. In the west door the lower part of one is still standing. It is an upright poros block broken off at the present height of the wall. The existing sills, which lie at about the height of the six bases in front and are moulded, are later. At the ends of the sills, holes are cut in to receive the wooden doorposts, and a groove runs along the upper side. The inside edge, remaining at the middle for the distance of nearly one metre and a half, is cut away at the ends.

Such are the remains of what I consider the oldest stage-building of which there is any trace in the Eretrian theatre. In its main lines it has the same arrangement as the stage-building of Lykourgos at Athens: two parallel walls behind and towerlike structures on the flanks. The front wall has three doors and the *paraskenia* have one each. The present orchestra lies too far away and too deep to have been that of this stage-building. The orchestra corresponding to this structure must have been on a level with the doors and must have extended close up to the building. The supposed position of this orchestra is indicated on the plan by a dotted circle. As no vestiges remain, both the orchestra and the seats were presumably of primitive construction. Near one of the stage-walls were found a few words of a fourth-century inscription referring to a theatre. This building being the oldest on the site, and answering also in plan to a theatre of the fourth century, we identify it with that of the inscription. There appears to be little doubt that the remains we have just described existed long before the

other parts were added. For, taken separately, the old stage-building has a clear purpose, but considered in connection with the buildings in front, it loses its meaning. The new buildings in part destroyed the old and in part left its foundations undisturbed, as they lay deeper than the later walls.

Whatever the causes or the motives, a new and more elaborate theatre was erected, taking the old building partly into account and retaining its orientation. The new theatre might have been built against the acropolis hill, but the same reasons that placed the old below in the plain, kept the new one there now. When it was once decided that the theatre should remain on the same site, there were evident advantages in sinking the orchestra lower than the stage-building. It would simplify the substructure of the *cavea*, and would give an elevated *scenæ frons* with less labor and expense. So the orchestra was lowered about 3.50 m. and the earth removed was used to build up the *cavea*. Against the bank of earth toward the *skene* a strong retaining-wall HH was built. The floor of the new building lies a little higher than that of the old one. The old floor-level of the chambers is given by the sills, the cuts for which still appear in the foundation-walls. The new sills are several centimetres higher, and these indicate the level of the new floor. The six column-bases supply corresponding evidence. The wide intercolumniation, and the fact that they are equally distant from BB and OO, show that they form an inner order and that we can assume the same level on both sides. These bases bore the columns that upheld the roof. That they belong to the second structure is shown by the fact that they in a measure obstruct the passages  $\gamma\gamma$ , from which it also appears that they were placed in position at a time when those passages were no longer used. It is important to fix the level of the pavement, as this will help us to arrive at the height of the front wall. But having the height of the bases, 3.83 m., we have also that of the front wall, which must necessarily be the same. Whether the front wall was continued as a solid wall or whether it supported a series of columns, we have so far not been able to determine, as the architectural members found could be fitted to either theory.

Communication with the orchestra being difficult over a wall 3.83 m. high, access was afforded by an underground vault ( $\Omega\Omega$ ) passing under the *skene* from behind the building. At the southern or ex-

terior end, steps lead down to the level of the orchestra. *Fig. 4* shows a section through the vaulted passage in the line of the column-bases. On the inside the passage is 1.98 m. wide and 2.95 m. high, and its length is the depth of the stage-building, 14.55 m. It is built of large poros blocks which were originally smooth-dressed on the exposed face, but now the surface is broken and has crumbled from dampness and exposure. The blocks have an average length of 1.36 m., and the three lower courses a height of 0.64 m., while the three upper courses average 0.46 m., and the keystone 0.44 m. Though the three lower courses have an inward inclination of 0.08 m. the arch proper begins with the fourth course. Allowing the slight inclination

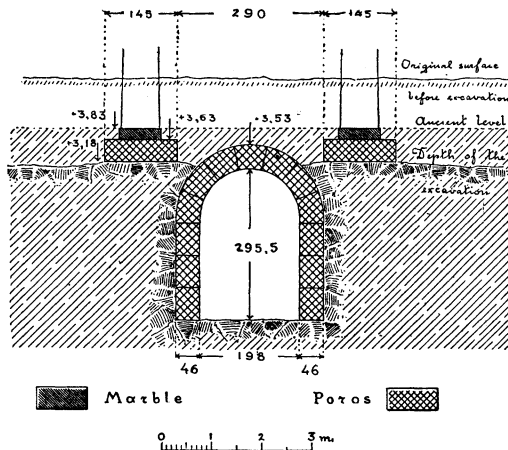


FIG. 4.—Vaulted Passage.

to be due to pressure exerted in the lapse of time, the upper courses and the keystone would form a semi-circle with a radius of about 1.00 m. The joints are exact, though they do not correspond in alternate courses. The vault is entire for a distance of 7.40 m., having fallen in at both ends. That the vault is contemporaneous with the front wall or *scenae frons*, is shown by the fact that the courses of the two are bonded together.

That this vaulted passage was a public entrance into the theatre is improbable, both because it is too narrow and because no necessity appears for an entrance in such a situation. Though the passage itself is 1.98 m. wide, the door opening into it from the orchestra is only

0.99 m. wide. Moreover the steps are steep and narrow—not such as we should expect where crowds were to ascend and descend. On the east side a *parodos* about 5 m. wide has been partly cleared, and on the other side will no doubt be found its counterpart. With ample *parodoi* on both sides of the *skene*, no reason is obvious for constructing a third access only 0.99 m. wide. In many theatres entrances are found from the level of the orchestra to the stage-building, and here, doubtless we have something of the same kind, only the passage lies under the surface owing to the elevated structure of the stage-building. Two solutions were open to the architect: the one a permanent stairway over the front wall, the other an opening through the wall and an underground passage; the latter solution was chosen perhaps because a stairway from the height of the front wall would necessarily project far into the orchestra.

The front wall consists in fact of two walls, the retaining-wall HH and the facing-wall OO. The retaining-wall, not intended to be seen, is built of rough poros blocks of about the same dimensions as those in the foundations of the *skene*. Its present height is 2.39 m., or 2.335 m. above the level of the circle of the orchestra. That it was originally higher appears from the fact that a great number of similar blocks were found lying in a line along the wall. It may have been as high as the bases, or, being merely a retaining-wall, it could have ended when it reached the surface of the ground. The roughness of the work is sufficient proof that this wall was never visible. There still remain in places as many as three courses of a facing-wall. The lowest course, which juts out 0.19 m. beyond the upper courses, is 0.64 m. high, and where the vaulted passage begins, the blocks are turned in at right angles in such a way that the blocks of the second course of the vault overlap them by one half. This shows that the two were constructed at the same time. The blocks of this course, too, are of the same size as those in the three lower courses of the vaulted passage. At the joints and along the upper edge are bevelled drafts. While the upper courses continue 0.59 m. beyond the retaining-wall and then at OO make a turn to the south at a slight angle, the lower course turns to the north (AI and KI) 8.885 m. from the vault and is then merged in other walls (IM and IN), which, at the same distance, make a similar turn toward the south. The second course of OO is of a finer poros, and is worked with extreme care. The joints are made with such exactness that they are not easily perceived. The course is 0.43 m. high and the blocks are as long as 2.42 m. and 2.62

m. Parts of a third course remain at the ends. The length of the wall  $\Theta\Theta$  is 26.20 m. Though the upper part of this wall has perished, it must have reached at least the level of the six bases. It is to be noticed that the second course of the wall  $\Theta\Theta$  is continued without foundation between K and  $\Theta$ . At the other end, between  $\Lambda$  and  $\Theta$ , the foundation is irregular and does not come out flush with the upper portions of the wall. Before reaching the oblique angles at  $\Theta\Theta$ , the wall extends for 0.59 m. unsmoothed, and there, probably, were the outer walls,  $\Theta N$  and  $\Theta M$ , of the *paraskenia*.

In the old *paraskenia* there remain angles of walls forming right angles, which in one limb,  $\tau H$  and  $\Pi H$ , advance toward the front wall, and in the other,  $\tau \Sigma$  and  $\Pi O$ , extend beyond the stage-building proper. On the west side, the wall  $\tau \Sigma$  appears to have extended at least 9.50 m. from the angle in the old *paraskenion*. It is not unlikely that the wall turned toward the north at about this point and joined the oblique wall  $P\Theta$ , forming thus an irregular chamber similar to one in the same position in the theatre at Epidauros. On the east side only two stones were found of this extension beyond the old wall, but these were enough to show that it had once gone further. These walls are laid on the ground without foundations, and are a patchwork of all kinds of material, especially of stones from the polygonal wall. The inner surface is faced with fragments of marble, and a bit of stucco was found in one place. That this wall is later than the old *skene* appears, apart from its bad construction and lack of foundation, most clearly in that it cuts away a corner of the old flank chamber, too small for a separate room. What remains of the wall between the old *paraskenia* and the front wall is built of the usual poros blocks. On the east side these blocks are laid one upon another endwise, while on the west side the position of the blocks in adjacent courses alternates; but on both east and west sides the walls are built with an irregularity which shows that they were hidden underground. This is important, as it enables us to establish that the surface of the soil was approximately on a level with the bases, and we gain another argument for restoring the front wall  $\Theta\Theta$  to the same height. On the elevated part of the *skene* and in line with the cross-walls  $\Lambda I$  and  $K I$  stand two bases.

Within the irregular rooms at the sides, and parallel to the oblique walls, are two little structures the significance of which is not yet clear. Their parallel side walls are 0.46 m. apart, and there extended a marble slab from the outside upper edge to the inside bottom level, broad



enough to touch the two walls. The lower end of the slab rested on another marble block. Beneath the structure on the east side we found the drain; if there is a similar drain on the west side it has not yet been recognized. Our excavations closed before these structures could be fully examined. They seem however to be connected with the drainage-system. It may possibly be that the water from the roof of the stage-building was conducted to these points and hence escaped into the drains below. What may have existed between the oblique walls is not yet known, as our work has gone only a little beyond the oblique angles  $\Theta M$  and  $\Theta N$ . Here may have been ramps ascending to the proscenium, side by side with the *parodoi* into the orchestra, as at Sikyon and Epidauros.

The work of the second period, then, consisted in erecting a new *scenæ frons* with projecting structures or *paraskenia* at the ends. Instead of a series of chambers, we have in this new stage-building a wide hall divided by a longitudinal range of columns. Owing to the height of the front wall and the disposition of the *skene* and orchestra, access to the latter was gained under the floor of the stage-structure.

Finally we come to the last change, a change similar to that found in many other theatres—the erection of a columned front (11) between the two *paraskenia*. At the Amphiareion of Oropos this feature bears inscribed on the architrave the designation *προσκήμιον*. To arrive at the date of this construction at Eretria is not easy. At Athens the corresponding feature is known to have been built between Lykourgos and Nero, as it was torn down to be replaced by another dedicated to Dionysos Eleuthereus and the emperor Claudius Nero (?). Hence there it dates from the first century B. C., and the stage-building of Lykourgos must have stood for a considerable time unchanged. This date suits reasonably well in the other instances also. On a poros foundation lies a marble stylobate 19.77 m. long. At the ends are places for two antæ, and between are dowel-holes for twelve semi-columns. The total number fourteen recurs in several theatres, as at Assos and Delos. Across some of the dowel-holes can still be traced the small line marking the axis of the columns. The intercolumniation varies between 1.50 m. and 1.52 m. The square dowel-holes have the usual channels through which the lead was run in. A fragment of one of the columns, Doric and channeled, was found, but unfortunately very incomplete. The general design, however, can be determined from the examples in other theatres. Deep rebates were

cut behind to receive slabs or *πίνακες*, and the stylobate in some places was cut down so that the *πίνακες* should fit closely. The width of the stylobate is about 0.45 m., the inner side being rough. In the middle are traces of a double folding-door with oblong holes for the door-posts and circular ones for the pivots. Two smaller pivot-holes further back point to a wider door of some other period. Now in estimating the height of this proscenium we must remember that there was a door in the wall, which indicates sufficiently that the columns were at least upward of two metres high. Calculating the height of the columns and entablature from the few fragments found, it appears that the proscenium without the stylobate would reach a height of about 3.40 m., or the level of the bases on the *skene*. This height coincides with the rule of Vitruvius that the proscenium should not be less than ten and not more than twelve feet high. Vitruvius is evidently speaking of such proscenia as ours, and it is interesting to find this agreement. Among various pieces of an Ionic cornice, we found one with an angle corresponding to the angles M and N beyond the proscenium. So we have, apparently, a Doric proscenium continued on the sides in the Ionic order.

The fact that the stylobate was left rough on the inside shows that the ground or floor between it and the *scenæ frons* was of the same height. But the opening into the underground passage here lies much lower, and it appears to have been made with a lower level in view. The basement-course of the *scenæ frons* consisted, as has been said, of blocks 0.64 m. high, carefully worked and fitted, showing that it was exposed to view. But, if the floor reached the level of the *proscenium* stylobate, it must have covered 0.44 m., or more than two thirds, of this basement-course. In excavating we found near the lower edge of this basement a layer of gravel. This, as it corresponds with the level of the orchestra-circle and with the opening into the underground passage, I take to show the original level of the orchestra. With the building of the proscenium the level of the entire orchestra appears to have been raised. The stylobate is 0.20 m. high, the lower half of which was left rough and unfinished because it lay under the level of the orchestra and was not seen.

Where definite indications were lacking, the upper part of the *skene* is restored, on the plan, according to the proportions of similar structures.

Just beyond the eastern *paraskenion* the drain is found. Starting from the semicircular conduit on the east side and passing under the

*parodos*, it turns by the corner of the stage-building at an oblique angle to the southeast, in the direction where the ground is lowest. It is formed of rectangular pieces of red tile open above (*Fig. 5*), not fitted into one another, but set close end to end and bedded in the ground. The tiles are 0.63 m. long, 0.24 m. broad, and 0.265 high. The drain was covered with separate flat pieces a little wider than itself. The tiles are 0.03 m. thick.

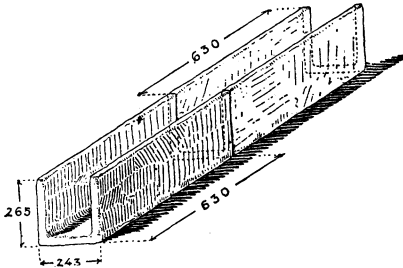


FIG. 5.—*Drain.*

In closing, I would observe that I came independently to the results set forth while directing the excavation of the theatre. It was no small delight to find, on my return to Athens, that Dr. Dörpfeld approved of the plans which I had drawn, and later, when he

visited the theatre, that he corroborated my views, making changes only in minor details. At the same time I must not omit to mention the kindly assistance Dr. Dörpfeld has rendered me in several instances, and the friendly interest he has taken in the work.

ANDREW FOSSUM.

## V. THE THEATRE AT ERETRIA. ORCHESTRA AND CAVEA.

In the work of the School at Athens at Eretria, Dr. Waldstein assigned to me the clearing of the *cavea*, orchestra, and *parodoi* of the theatre. This was pursued so far as to determine the level and extent of the orchestra, to follow the lowest row of seats and the bounding-curb of the orchestra from the middle to the eastern *analemma*, and to define, rather imperfectly, the eastern *parodos*. To this must be added the discovery of a most interesting underground passage, extending from about the centre of the orchestra to a point just within the later proscenium-wall. At Dr. Waldstein's suggestion, excavation was carried on also through the *débris* surrounding a lime-kiln near the theatre, but without result.

Work in the orchestra was begun on Feb. 24, with a trench a little more than 1 m. wide, perpendicular to the proscenium at its middle point. Very few fragments were found either in marble or in poros, until, on the second day, at a depth of about 0.70 m., two large poros